

THIS DOCUMENT CONSISTS OF 3 PAGE(S)
NO. 5 OF 14 COPIES, SERIES A

~~RESTRICTED~~

Box H209-17

RH
Chief Chemist
Frank M. Johnson
J. L. Faber
The Industrial Hygiene Section of the Works Laboratory is concerned with the detection and determination of chemically hazardous substances in air, water and urine.

A list of the different substances determined includes:

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
Declassification [Grade Number(s)]	
1st Review - Date: <u>4/11/97</u>	2nd Review - Date: <u>4/14/97</u>
Authority: <input type="checkbox"/> ADC <input checked="" type="checkbox"/> E&DD	Authority: <input type="checkbox"/> ADC <input checked="" type="checkbox"/> E&DD
Name: <u>John F. Johnson</u>	Name: <u>John F. Johnson</u>
2nd Review - Date: <u>4/14/97</u>	2nd Review - Date: <u>4/14/97</u>
Authority: <input type="checkbox"/> ADD <input checked="" type="checkbox"/> DOD	Authority: <input type="checkbox"/> ADD <input checked="" type="checkbox"/> DOD
N/A	

I. In Air

Substances

	AEC Tolerance in ppm	C & E&C Tolerance in ppm
Ammonia	100	100
Carbon Monoxide	100	100
Carbon Tetrachloride	100	75
Fluorine	1	0.3
Hydrogen Fluoride	3	3
Hydrogen Sulfide	20	20
Phosgene	1	1
Trichlorethylene	200	200

Milligrams per cubic meter

Cadmium	0.10	0.10
Mercury	0.10	0.10
Uranium Hexafluoride	0.15	0.25

II. In Water

Substances	AEC Tolerance in ppm	C & E&C Tolerance in ppm
Fluoride	none given	0.1 to 0.4 *
Uranium	none given	10 ⁻²

III. In Urine

Substances	AEC Tolerance in ppm	C & E&C Tolerance in ppm
Ammonium	none given	1.5
Normal Uranium	none given	0.01
Enriched Uranium	none given	0.001 *

* These analyses are not being done at present.

Reports of air analyses are now being sent to Division Heads or their designated alternates.

Urine analyses are reported to the Medical Department or if over tolerance directly to the Division Superintendent by phone.

Water analyses have been sent to members of the Special Hazards Committee.

This document contains information affecting the national defense of the United States within the meaning of the Espionage Act, 50 U.S.C. 7 and 32, as amended. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

~~RESTRICTED~~

~~RESTRICTED~~

The water analysis program was started this fall in order to assure plant personnel at Y-12 and at K-25 of the absence of uranium in potable water and in order to detect uranium in Clinch River water below the plant.

The results of daily, weekly and monthly analyses of plant water are presented in the accompanying table.

Recommendations are desired with respect to:

1. Future program of water analyses.
2. Possibly more suitable system for reporting all analyses.

~~RESTRICTED~~



**SUMMARY OF WATER SURVEY ANALYSES
for month of October 1947**

	Sampling Point	Strontium		Fluoride		Counts	Remarks
		-	+	-	+		
DAILY SAMPLES							
1.	X-12 drainage	9	6 ^a	0	0	10 ^b	2 ppb
2.	River influent to K-25	13	0	0	0	10 ^b	0.1 to 0.5 ppb
3.	Clinch River (4 miles below K-25)	11	18	1	100	10 ^b	0.5 to 2 ppm/July/Aug 1947
Total		32	7	1	8	80	0.3 to 2 ppm/July/Aug 1947
WEEKLY SAMPLES							
1.	Poplar Creek influent to K-25	2	15	0	0	10 ^b	2 ppb
2.	Poplar Creek outlet N.W. of K-305-3	0	3 ^b	0	0	10 ^b	0.1 to 0.5 ppb
3.	Recirculating water, K-25	2	2	0	0	10 ^b	0.5 to 2 ppm/July/Aug 1947
4.	Recirculating water, K-27	1	0	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
5.	Effluent from sewage disposal plant	0	23	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
6.	Influent to sewage disposal plant	0	30	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
7.	Poplar Creek above Clinch River	0	3	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
8.	Clinch River above K-25	2	2	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
9.	Clinch River below Sp50	0	3	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
10.	Draining water K-25	1	21	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
11.	K-171 outflow into Poplar Creek	1	21	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
12.	S-50 sewer outflows into Clinch River	0	32	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
Total		16	14	1	2	10 ^b	0.3 to 2 ppm/July/Aug 1947
MONTHLY SAMPLES							
1.	Monthly samples	0	0	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
2.	Garner house discharge	1	1	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
3.	Cateteria cooling water	1	1	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
4.	Clinch River below Poplar Creek	1	1	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
5.	Sewage drains in pool S.W. of garage	0	10 ^b	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
6.	Garner house intake	0	10 ^b	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
7.	Clinch River at S-50 drainage	0	10 ^b	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
8.	Drainage ditch into Poplar Creek west of Carbide "hot" scrap yard	1	1	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
9.	Poplar Creek behind K-305-2	1	1	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
10.	Sewage pipe north of K-305-10	1	1	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
11.	Sewage pipe behind K-306-3	0	0	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947
Total		10	1	0	0	10 ^b	0.3 to 2 ppm/July/Aug 1947

~~RESTRICTED~~

